(51) International Patent Classification [7] :	A2	(11) International Publication Number:	**WO 00/21012**
G06F 17/60		(43) International Publication Date:	13 April 2000 (13.04.00)

(21) International Application Number: PCT/US99/23224

(22) International Filing Date: 4 October 1999 (04.10.99)

(30) Priority Data:
60/102,967   2 October 1998 (02.10.98)   US
Not furnished   1 October 1999 (01.10.99)   US

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(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published
Without international search report and to be republished upon receipt of that report.

(54) Title: ELECTRONIC CATALOG AND SHARED ELECTRONIC TRANSACTION SYSTEM

(57) Abstract

An electronic catalog and shared electronic systems which can be accessed over a computer network. Various items of the catalog are stored in a database and can be selected by a user in accordance with user determined parameters.

ELECTRONIC CATALOG AND SHARED ELECTRONIC TRANSACTION SYSTEM

PRIORITY TO PRIOR APPLICATION

This application claims priority to Provisional Application Serial No. 60/102,967 filed October 2, 1998.

BACKGROUND OF THE INVENTION

The present invention generally relates to the field of electronic databases and, more particularly, is directed to an electronic catalog and shared electronic transaction system which enables users of the system to retrieve requested data conveniently and economically.

The present invention will be described in the context of a government order processing system, but the novel and unobvious features of the invention have application in a wide variety of government and commercial (business-to-business) environments where large amounts of information must be cataloged and made available to users in an expeditious manner. The invention is described for its use on the World Wide Web part of the Internet. It should be understood, however, that the benefits of the invention may be

realized with any computer network (LAN, etc.) that supports multiple users.

One of the most important requirements of an economy is to bring buyer's wishing to buy products into contact with sellers [having products to sell]. In an economy driven by competition, there are often many competing products from which a buyer can choose. Moreover, as modern day communications make the world smaller and greatly expand market territories, a buyer is often confronted with a confusing array of considerations when making a purchasing decision. Price, quality, suitability, and delivery time are but a few of the many factors a purchaser must consider when making a purchasing decision. Thus, an informed purchasing decision often requires the purchaser evaluate the offerings of several vendors. Doing so can be time consuming and a busy purchaser may simply opt to make a purchase without doing any real comparison shopping. While making purchasing decisions in this manner may not be detrimental for a small number of purchases, the potential savings that result from a more careful purchasing decision can mount substantially when large numbers of purchases are involved. For example, federal, state and local governments routinely make purchasing decisions involving large numbers of items and large sums of money. The ability to make purchasing decisions quickly

while simultaneously ensuring the proper item is purchased at the lowest cost is critical to maintaining the effectiveness of a procurement system.

In addition, vendors also require an efficient and cost-effective way of informing potential customers of their wares. Traditionally, paper catalogs, advertisements and personal sales calls have served this purpose. Each of these methods has its inherent drawbacks. For example, paper catalogs are expensive to print and distribute and usually do not remain current for any significant length of time. Advertising and personal· sales calls also are expensive and tradeoffs must be made over which products will be promoted to which potential customers.

Accordingly, there is a great need for a system which can effectively catalog large amounts of information such as product description, prices and the like, make it available to those in need of such information in the form of multiple comparative shopping listings, and allow for real-time purchase transactions, including credit facility use, all in a secure electronic environment.

BRIEF DESCRIPTION OF THE DRAWINGS

In order to meet this need, Applicant has invented an electronic catalog and shared electronic transaction system. The

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novel features of the invention will be understood more fully and clearly from the following description of the invention as set forth in the accompanying drawings in which:

Figure 1 is an illustration of the system architecture of the present invention;

Figure 2 is an illustration of a product mapping process in accordance with the present invention;

Figure 3 is an illustration of a 3-step catalog search in accordance with the present invention;

Figure 4 is an illustration of how transactions may be shared in accordance with the present invention;

Figure 5 is an illustration of a process for printing completed PDF forms using data entered into HTML forms in accordance with the present invention; and

Figure 6 is a data flow of the interaction between a buyer and a seller in accordance with the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

As mentioned above, the present invention and processes will be described in the context of a government order processing system as implemented on the World Wide Web and will be referred to as an "Electronic Catalog Service." Figure 1 illustrates the system architecture. The invention and processes can also be applied in

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the commercial setting.

Electronic Catalog Service

The Electronic Catalog Service is the common entry point for all buyers and sellers. The supplier catalogs with MSRP prices can be searched by anyone. Private contract catalogs are only searched and used to create RFQs (Request for Proposal) and purchase orders by authorized buyers.

The Electronic Catalog Service provides the ability for a governmental entity to post its term contracts, schedule contracts, surplus property and other buying vehicles that are available to multiple buying jurisdictions, on an on-line, Internet environment.

This selective "electronic catalog" capability also permits buyers to make their purchase selections on-line, and have them converted into EDI or FAX purchase/release orders for transmission to the catalog supplier. The buyer vehicles are in themselves small "catalogs" that contain items, part numbers, and previously negotiated or set prices. These mini contract "catalogs" are maintained in the private part of the catalog database where buyers can access them through the Internet. Only those buyers that have the authority to make purchases off of a particular contract can see items and prices. When a buyer has access to multiple

contracts covering the same products or a buyer wants to check published MSRP prices from public catalogs, he or she is able to compare the prices for the different suppliers and manufacturers of similar items.

The backbone of the catalog holds three major types of items that make up the products and services that the buyers buy and the sellers sell, First there are the generic items -- 175,000 covered by the NIGP 11 digit code and over 6 million in the Federal Supply Catalog. Second, each generic item is replicated 5 to 10 times with each occurrence associated with a different manufacturer's part number - over 20 million in the Federal Supply Catalog. Third, these specific items can be replicated 10 to 20 times for the different contracts or catalogs that carry them. These items carry the additional supplier's stock or price list number.

Internet technology is rapidly evolving. As it continues to improve, the catalog will become more graphical and support multimedia presentations that will surpass the quality of the message that suppliers make now in their print catalogs. While links are routinely provided to supplier web-sites so that buyers can investigate a particular product or service, many small merchants will not want to build their own web site capable of sending out streaming audio, video and animation feeds.

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An integral part of the Electronic Catalog Service is to work directly with site promotion services to ensure the maximum and most appropriate visibility of Web site facilities to Web search engines and other appropriate points of publicity, including placement of animated "tile" advertising on appropriate Web pages (e.g., the Netscape Net Search page) and active promotion of reciprocal hypertext linking with related Web sites.

Catalog Enhancements

A number of pre-existing databases make the service offered by the present invention unique and much easier to find items than services that just load contract items into a database.   Even before any contracts items are loaded into the database, it is already filled with the following databases:

NIGP Code

The foundation of the procurement catalog data management system of the present invention is the NIGP Commodity code. Contract and open market catalog data is mapped to the NIGP code as the common delineator so familiar to public sector purchasing agents.   The code is licensed from NIGP.

The NIGP coding scheme provides familiar, visible classifications that buyers will use to search for items to

purchase. The unique capability of the central catalog is the neutral link and cross reference that it provides to other major catalogs. Multi-vendor catalogs such as those built by Granger, Sweets or Sears as well as those from single manufacturers like Caterpillar whose catalog, though proprietary, are completely replicated by independent catalog companies.

Another enhancement to the catalog is to add tools that assist the buyer in preparing RFQs for complex products and services and that assist the seller in working up their Bids. Using the latest Internet technology, these tools are being converted into Java applets that run at the user's PC and work on data files linked to the product or service being solicited.

Trade Services Catalogs

Trade Service Corporation is the recognized leader in providing Benchmark Pricing to agencies throughout the United States. As a neutral third party provider of data, Trade Service gathers information from thousands of manufacturers throughout the country. This information is compiled into industry standard databases. The information is massaged to ensure consistent output, and then disseminated in multiple formats depending on user

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requirements. The information is constantly updated to reflect the manufacturers' latest suggested resale price, as well as catalog number, UPC, unit of measure, etc.

Benchmark pricing, and electronic catalogs developed around live information, generally results in deeper discounts for agencies. This is due to the varied commodity structures against which vendors are able to bid. Rather than provide a single discount for commodities, the vendors can provide multiple discounts against commodities, sub commodities, manufacturer lines or single items. Bids can be received against a fair fixed price for the life of the contract, or allowed to float as economic changes occur. In this case, the negotiated discount is factored against the changing list price. The database always remains current reflecting negotiated contract pricing. Benchmark, or neutral third party pricing benefits public sector agencies throughout the solicitation, pre-and post-award processes.

Trade Service databases are used as a benchmark throughout the bid process. Because the information is neutral, containing Universal Product Codes (UPC's) and manufacturer catalog numbers, rather than vendor specific SKU numbers, all vendors can respond to solicitations with the assurance that they are bidding against a level playing field. Vendors provide discounts against the

manufacturer's list price, rather than the vendors' list price. This streamlines the process for evaluating bids, comparing responses, and awarding contracts; and ultimately saves considerable time and taxpayer dollars.

The electronic catalog becomes a powerful tool for ordering materials and auditing vendor invoices. Because the database contains UPC's, it reflects the same schema as vendors' internal systems making ordering consistent.

A central data repository managed by a neutral third party data provider will improve the purchasing and materials management functions. Improvements are through the reduction in data errors inherent in manual input, accessibility to bar code and product identification information, current contract pricing, and material safety data sheets. Through the use of industry standard data that utilizes universal product codes cross referenced to manufacturer part/stock numbers, the jurisdiction can expect reduced transaction costs, increased buying power through aggregated purchasing, and streamlined contracting processes.

Federal Supply Catalog

This catalog, built and maintained by the Department of Defense over the last 50 years, provides over 6 million National Stock Number (NSN) items that have been identified as having unique form, fit and function and have been classified by three coding schemes that will link to the NIGP codes:

- Federal Supply Class (FSC)

- Federal Item Identification Guide (FIIG)

- Approved Items Name (AIN)

Once links have been made between the NIGP codes and the NSNs, other valuable information can be made available, such as:

- Specific Manufacturer Part Numbers

- Prices for Previously Awarded Contracts

- Searchable Technical Characteristics

Excess/Surplus Inventory Items

The service also has the capability for governmental entities to advertise excess and surplus property on the Internet. The advertisements are searchable by the NIGP Code (both class 998 and the class-item for the item when originally purchased; i.e. 070-06 for automobiles). Advertising jurisdictions will have several options:

· Restrict sale of the item to other units of government; sale to be by electronic bid with a specified bid opening date.

· Permit the item to be sold to anyone, including the general public; sale to be by electronic bid with a specified bid opening date.

· Offer the item for sale at a pre-established price (restricted or unrestricted).

Agencies are able to advertise upcoming auctions of excess and surplus property. This information can be made available on the Internet to the general public who could search by commodity code or geographic location.

Currently there is no established marketplace for selling excess and surplus property that is unique to government; such as voting machines, police radios, etc. This capability provides a low cost method for creating an electronic marketplace.

Product Mapping Process

Figure 2 illustrates how the product mapping process occurs in accordance with the present invention. The system administrator receives computer files from buyers and vendors. These files contain lists of product names and contract or manufacturer

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suggested prices for various products. The contract prices are usually ones which have been the subject of negotiation between the buyer and the vendor and will remain in effect for some period of time. The manufacturer suggested prices, on the other hand, are prices which are available to the general public.

In addition to product prices, the computer files may also contain manufacturer model numbers for each of the products, products descriptions, the manufacturer's name, quantity price breaks and may even include a graphical representation of the product. In essence, the computer file is an electronic equivalent of a conventional paper catalog. The computer file, however, can be searched electronically based on key words and various other search parameters and relationships.

The objective of the mapping process is to take product catalog information from various buyers and vendors which is often not consistent between catalogs and map it to an existing reference catalog of product data (i.e., the proprietary data structure illustrated in Figure 2). The reference catalog is created from a number of sources, including industry codes such as the National Stock Number ("NSN"), the National Institute of Government Purchases (NIGP) and the Universal Product Code ("UPC"). These codes represent classifications for various products and are well

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understood by the purchasing industry. A classification for most products can be found in each of the codes. Many states and local governments also have product coding systems which the present invention may use as well.

In mapping the buyer and vendor catalog files, various key words such as product name and model number are used to find the proper classification in the reference catalog. The process is greatly aided if the buyer and/or vendor catalog files also include an NSN, NIGP or UPC code for each product. If the buyer and vendor catalog files do not include such a code, the file may be compared to a stored database of invoices, purchase orders, bills of lading and the like in search of an NSN, NIGP or UPC code which matches the product. Such purchasing records are available from the Federal Government as well as other sources. If an appropriate classification cannot be determined automatically, a human operator can make the determination.

Once a classification for the product has been determined, it is given a new reference code from the reference catalog. Using the techniques of the present invention, it has been found that a proper classification can automatically be determined 85 percent of the time.

Product Catalog Search

Figure 3 is a flow chart of a 3-step catalog search in accordance with the present invention. For example, if an end-user wishes to retrieve information on a particular product, appropriate key words are used to find the product classification. Once the classification is found, the second step involves finding a particular sub-category for the product.

This sub-category may well include several similar products from different manufactures, thus enabling the user to do product comparisons. The user then completes the third step by making a product selection based on, for example, manufacture and model number.

The steps involved in preparing and using the catalog for a state or local government purchasing offices are described in the following sections:

Verify Catalogs & Set Up Contracts

Contract officers browse items in the Contract Catalogs they received after they have been loaded or updated by them or their suppliers. Contract officers also set-up, confirm or change the prices and terms for each contract they are administering. Larger suppliers can also perform these same functions. Smaller suppliers using the first level service cannot make changes to the catalog items.

Browse Contract Catalogs

Buyers can search through items in the catalogs limited to the catalogs from which they are authorized to purchase and their product profiles. Both of these filters can be easily modified for a particular session by turning on and off specific contract and/or product groups. There are two basic methods of locating an item. The keyword method is a two step process with the first search returning those product families that match the entered keywords. Then the user picks the lowest level product family to see the items available for purchase. The second method of browsing the catalog database is to navigate down a product family hierarchy that often has small pictures related to the type of product. When the lowest level product family is reached, the user picks those he or she wishes to purchase. The final list of actual items to purchase can be filtered by manufacturer, price and keyword in the product name.

Query Public Catalogs

If a buyer cannot find an item on the Contract Catalogs issued to them by their Contract Administrator, they can search the public Supplier Catalogs maintained at the Catalog Service. This can be done at the same time as the search of authorized contracts or separately by modifying the catalog profile for that session. The

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Buyer can do comparison shopping between the prices of items that may appear on multiple private contracts or public catalogs. The result is a list of similar items from different manufacturers and different suppliers.

Electronic Procurement System

Figure 4 illustrates a business model for conducting commerce in accordance with the present invention. The top portion of Figure 4 shows the conventional manner in which buyers and vendors interact. The arrows indicate the exchange of purchase information in the form of request for quotes, purchase orders, invoices, bill of sales, shipping notices and the like. The exchange of each piece of information is in many cases only for the purpose of creating a "paper trail" should reconciliation become necessary. Creating this "paper trail" is, however, expensive, time consuming, and is wasteful of resources. The need to dispose of these paper records when they are no longer needed poses additional concerns.

Applicant has discovered that a more efficient way of tracking commercial transactions is to maintain them in a shared database as illustrated in the bottom portion of Figure 4. When a buyer wishes to submit, for example, a purchase order, it is stored in the shared database and is immediately available for review by a vendor. Thus, there is no reconciliation necessary because only one

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copy of the transaction exists, i.e., the copy which is stored in the shared database.

The Electronic Procurement System is for those procurement offices that wish to maintain an electronic link with their suppliers, but do not want to undergo the time and expense to setup direct EDI links between themselves and all their suppliers under contract. Using a secure Internet browser, buyers can look at records of all intermediate revisions or cancellations of purchase orders, shipping notices and invoices that flow back on forth between them and the buyer. The electronic link on the supplier side can be either through the Internet if they are using the Bidder's Service or through their established EDI VAN.

The introduction of "Purchasing Cards" has helped to reduce overall administrative costs. The service accepts these purchasing cards, along with other general purpose credit cards.

Administer Buyers & Suppliers

Contract administrators set-up and assign Buyers who are authorized to make purchases off of each contract and/or if they can make purchases of public catalogs at suggested retail prices. Contract administrators or the Buyers themselves can also set up a product profile that will be used to limit the items in the public catalogs or private contract catalogs. Suppliers that do not have

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a contract or public catalog loaded at the Catalog Service can register themselves and maintain their own product profiles for filtering RFQs that they are interesting in bidding on.

Prepare RFQs or Purchase Orders

The Buyer selects the items they wish to purchase from the private contract or public supplier catalogs on their Internet Site. The Buyer has the following options as to how they would like to proceed when looking at a list of similar items:

Pick specific items to put on Request For Quotes to be sent to the appropriate suppliers. In this case the item is known and the supplier responds with their best price.

Pick generic items without a Manufacturer and Product Number to put on a Request for Quote that is sent to the appropriate Suppliers. In this case the Supplier selects the specific item in their response.

Pick generic items without indicating a Supplier. This is known as an un-addressed RFQ that is addressed each night by the Electronic Catalog Service according to Supplier profiles. These requests are also

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placed on the Electronic Bidder's Service for

Suppliers to search if they do not received

notice of the item due to their product

Profile.

Pick specific items with a manufacturer and

part number to put on purchase orders to be

sent to the appropriate suppliers.

Buyer orders are immediately updated in the Electronic

Procurement System databases and are immediately available for any

Supplier that is a customer of the Bidder's Service. For those

that are not, the order is transmitted through the EDI VAN service

if the Supplier is registered as EDI-capable. If not the order is

sent either via e-mail or fax depending on preference of the

registered Suppliers.

Authorize Payment for Orders

If the user wants to pay for the order immediately with a

credit card, digital certificate smart card or procurement card,

the service takes control of the operations to perform the payment

and order fulfillment processes. The exchanges between the browser

and the server are encrypted to insure confidentiality and

performed behind a firewall. The check-out procedure is as follows.

After establishing a secure link with the browser, the server

receives the content of the shopping cart and presents an order form to the buyer for collection of secure personal information to complete the transaction. The client then enters the requested personal information (billing and shipping addresses, phone number, E-mail address, etc.); chooses among the payment options offered; then enters the requested payment information, e.g. credit card type, account number, etc.

All information that is captured in the above process is recorded in a secure transaction database for subsequent use in daily and monthly reports. The process also adds the applicable taxes and shipping costs.

Review or Update Orders

The Supplier receives its orders from the Buyers either immediately through the Catalog Service if the are a customer, or via an EDI transmission, Fax or E-mail depending on their level of service. The supplier then indicates if the order can be shipped in full, or if one or more line items must be back ordered.

When a supplier is an EDI customer or a Bidder's Service customer, the buyer will receive acknowledgments, adjusted purchase orders and intent to ship documents soon after the supplier releases them. For any item on an order that is not yet indicated as being shipped, the buyer can cancel or change and re-submit it to the

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supplier.

Receive Shipping Notices and Invoices

Suppliers that are customers of the Bidders Service can "turn-around" the Purchase Order into multiple Shipping Notices or Invoices when they are ready to ship. The Supplier can indicate that some items must be back-ordered and thus create partial Shipment Notices or Invoices by picking a subset of the line items or by splitting the quantity ordered into shipped and not-shipped quantities for individual line items.

EDI capable suppliers use their own internal system to process the order and send it back to the Buyer through their EDI VAN Service. Suppliers that received their orders either via Fax or E-mail notify the Buyer of the intention to ship via traditional means or via E-mail. In all cases, however, the status of the order will simply be "PO Sent" until the Buyer authorizes a payment for the purchase. Buyers will immediately see these shipping notices and invoices if they are a customer of the Order Management Service.

Update Order History

A copy of all sales invoices processed by the Catalog Service or received by the VAN service are recorded by the Order Management Service. These award notices can be kept as part of the Contract

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Catalogs. Copies of all transactions processed by the Catalog

Service or sent through the VAN Service are kept in the Order

Management database for daily and monthly reporting.

Billing and Payment Methods

In order to complete the purchase cycle and capture important

data about the procurement process, an electronic payment must be

made. It can be by credit card and the traditionally paper-based

part of the transaction is over. But most business and governments

would rather pay monthly bills and only pay after goods have been

received and inspected to be in good condition. Converting this

method of payment is a challenge for everyone involved, now

including the buyer's and seller's bank. The service was the first

to support a totally secure environment including credit cards, and

bank independent Electronic Funds Transfer, in addition to providing

a unique capability to connect with suppliers using Electronic Data

Interchange (EDI) for managing and processing of orders and

invoices.

This system has a comprehensive payment and order fulfillment

capability. It includes a transaction server and many back-office

functions: processing credit card payments (Visa, MasterCard, AMEX,

Discover and all other popular cards); business purchase cards for

business-to-business transactions; tax calculations; shipping method

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selection and billing; e-mail confirmations; inventory verification and complete order fulfillment including delivery of orders to multiple suppliers in any format of choice - EDI, fax, e-mail or computer file. These functions take place behind a "firewall" which prevents unauthorized access to the back-office functions. The system provides access to transactional and statistical information pertaining to a customer purchases either on-line or as report files.

The system has integrated payment and order-processing capabilities into its catalog web-site using Industry-standard security software that supports Microsoft and Netscape Internet browsers as well as the new Secure Electronic Transaction (SET) protocol developed by MasterCard and Visa International.

State and local government purchasers can securely market products and services, accept orders, process payments and fulfill orders on the Internet. Delivery can be immediate in the case of soft goods such as publication material, registrations and software. In the case of hard goods, a transaction will be transmitted to the suppliers and goods will be shipped in the normal fashion.

The moment that the customer commits to make a purchase by clicking on the prepare order button, the Catalog Service completes the payment and order fulfillment process in a secure back-office

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environment. The payment can be accompanied by a remittance notice

if the supplier is capable of receiving EDI transactions.

Credit Card Transactions

An example illustrates the flow of information for a credit

card transactions. An on-line credit check with the appropriate

financial institution is made through the normal credit card

authorization process if the credit is authorized, the required

funds for order settlement is temporarily held until it is

determined if the merchant is able to fulfill the order and the

customer is notified on-line of the status; if the credit request

is denied, the customer is notified on-line that his order can not

be accepted the order is sent to the supplier via the Internet as

an E-mail, fax or a computer file or in EDI format.

The supplier acknowledges receipt of order following an

inventory verification, an invoice confirmation is returned to the

Order Management Service by the supplier if the order can be

fulfilled; if the order can not be fulfilled, notification to this

effect is transmitted. The pending payment transaction is processed

through the financial institutions. Where the order is fulfilled

both the customer and the supplier are notified of the outcome of

the purchase request (e.g. by E-mail, or Fax) and the customer

receives a final invoice if the order is being fulfilled, or a

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notification that the order cannot be fulfilled in accordance with contract or delivery requirements.

Upon completion of the processing of an order, the Order Management Service provides confirmation on the acceptance/refusal of the order to the intervening parties. An important feature of the service is that the system can accept all popular credit cards for which the individual merchants have been accredited, including VISA, Mastercard and American Express, while the debiting of purchaser accounts and crediting of merchant accounts can take place with any financial institution. Furthermore, the system will also accept a large number of private credit cards, e.g. from retail organizations.

On-Account Transactions

In the case of a state and local jurisdiction, ordering from a supplier under some form of blanket purchase agreement or indefinite delivery contract, it is more common to pay on account as opposed to use of a credit card as per the previous examples. The supplier in this case will have established terms of payment with its clients, e.g. net 30 days.

The process for on-account payments is similar to the credit card process with the following differences. The first step is to confirm that the customer has a valid pre-established account with

the merchant. The order processing proceeds in the same manner the order confirmation proceeds in the same manner with an invoice being sent to the customer; however, there is no immediate debiting of the customer account and crediting of the merchant account, as was the case with credit card payments, as payment will only be due at some future date as established between the merchant and the customer the invoice can be paid on-line through the Internet at any time after receipt, with the option of specifying the deferred date on which payment is to be made.

Procurement Card Transactions

These type of transactions are similar to the credit card transactions in that an on-line check with the appropriate financial institution is made.

Complete Transactions Reporting

A complete record of all buyer transactions is available, made through the Catalog Service. In addition to the standard transaction reporting, many other analysis type reports can be generated for improved management information.

An example of a report is an open purchase order journal produced on an ad-hoc basis including vendor order details and order fulfillment status. The Order Management Service can also provide information that helps to determine which products are being

frequently ordered that might be better purchased in larger lot sizes.

Daily Transactions

This report gives a list of all transactions performed so far during the current day. The information contained in the report is:

Transaction number

Date and Time of transaction

Organization ID

Buyer ID

Seller ID

Session ID (recorded sequentially for each buyer)

Contract ID

Payment Type

Sales Total

Shipping cost charged

State or Provincial sales Tax

Federal Sales Tax

Transaction Total (sum of sales amount + shipping + sales taxes)

Seller's Name

Seller's Address (excluding City, State/Region, Zip and Country).

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Seller's City, State/Region, Zip and Country

Telephone number of Seller

E-mail Address of Seller

Shipping Name (Name appearing in shipping address)

Shipping Address (excluding City, State/Region, Zip and Country).

Shipping City, State/Region, Zip and Country

Billing Name (Name appearing in the billing address)

Billing Address (excluding City, State/Region Zip and Country).

Billing City, State/Region, Zip and Country

Telephone number of Buyer

E-mail address of Buyer

Status code indicating the completion status of the transaction.

Confirmation code (this is the credit acceptance code).

Daily Transaction Detail

This report gives the details on the products involved in a specific transaction. This report provides the information contained in the transactions of the day listed above plus the following product information (one line per product):

Transaction number

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Product number.

Quantity ordered.

Product description (obtained from the catalog).

Unit price of the product.

Monthly Transactions

This report will list all products and services for all transactions performed during a specified month. The information given in this report is:

Transaction number

Date and Time of transaction

Product number

Quantity

Product Description

Unit Price of product

Monthly Transaction Summary

The information provided in report summarizes the daily transactions with the following information:

Total number of transactions during the period.

Total State or Provincial sales tax for the period

Total Federal sales tax for the period

Total shipping charge for the period

Total transaction amounts for the period.

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The information is grouped by:

> Completed transactions
>
> Rejected transactions
>
> Canceled transactions
>
> Problem transactions

Product and Services Purchased Summary

A monthly file which contains a list of all products sold during the month along with the class, name, supplier, purchase amount, manufacturer and quantity (if applicable) sold for each product and service.

HTML-PDF Forms

Figure 5 illustrates another concept in accordance with the present invention related to business forms. There are many situations known in the prior art wherein filling out a paper form is a prerequisite to obtaining a service or benefit. Insurance and medical forms readily come to mind. In most cases, the service or benefit will not be rendered unless the proper form is used and is completed in the proper way.

Applicant has discovered a novel way in which much of the tedium can be eliminated when completing complex and cumbersome forms. The invention builds on the advances in printing documents made possible by the Adobe PDF technology. Although PDF technology

represents a major advance in printing complex documents, there

remained deficiencies in how the printed information is compiled.

In accordance with the present invention, a process is provided

in which data for a printed form can be entered into, for example,

a user friendly HTML form. The data is then checked for accuracy

and/or a determination is made whether the entries fall within

predefined ranges. The user can then be alerted to any errors and

given an opportunity to correct them before proceeding further. Once

the HTML form is completed, the form data is transferred to the

corresponding PDF form for printing by both the one filling out the

form and also by the form recipient.

Because it is time consuming to convert a regular form to an

HTML form, Applicant has also invented a process to generate

automatically the HTML form, the CGI program that verifies and

checks the user entries as well as automatically creates a database

for the form data.

It should be obvious from the above-discussed apparatus

embodiment that numerous other variations and modifications of the

present invention are possible, and such will readily occur to those

skilled in the art. Accordingly, the scope of this invention is not

to be limited to the embodiment disclosed, but is to include any

such embodiments as may be encompassed within the scope of the

claims.

WE CLAIM:

1.   An electronic catalog system comprising:

     memory means for storing a peramater of catalog items;

     selection means for selecting one of said catalog items;

     user input means for making said selection in accordance with

     user determined peramaters; and
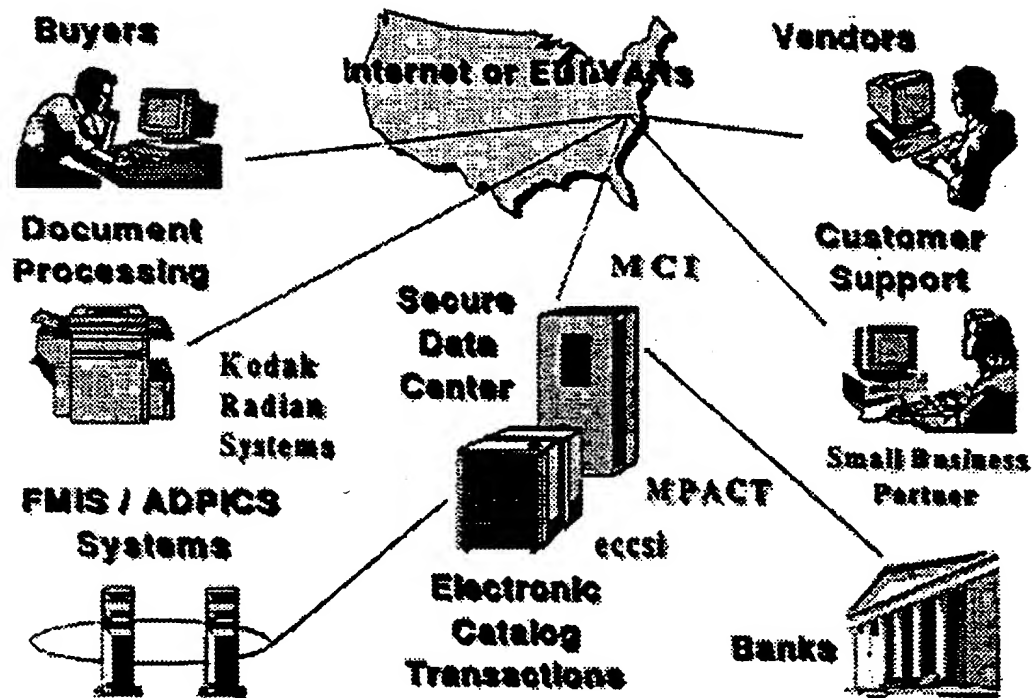
     control means for controlling said selection process.

-34-
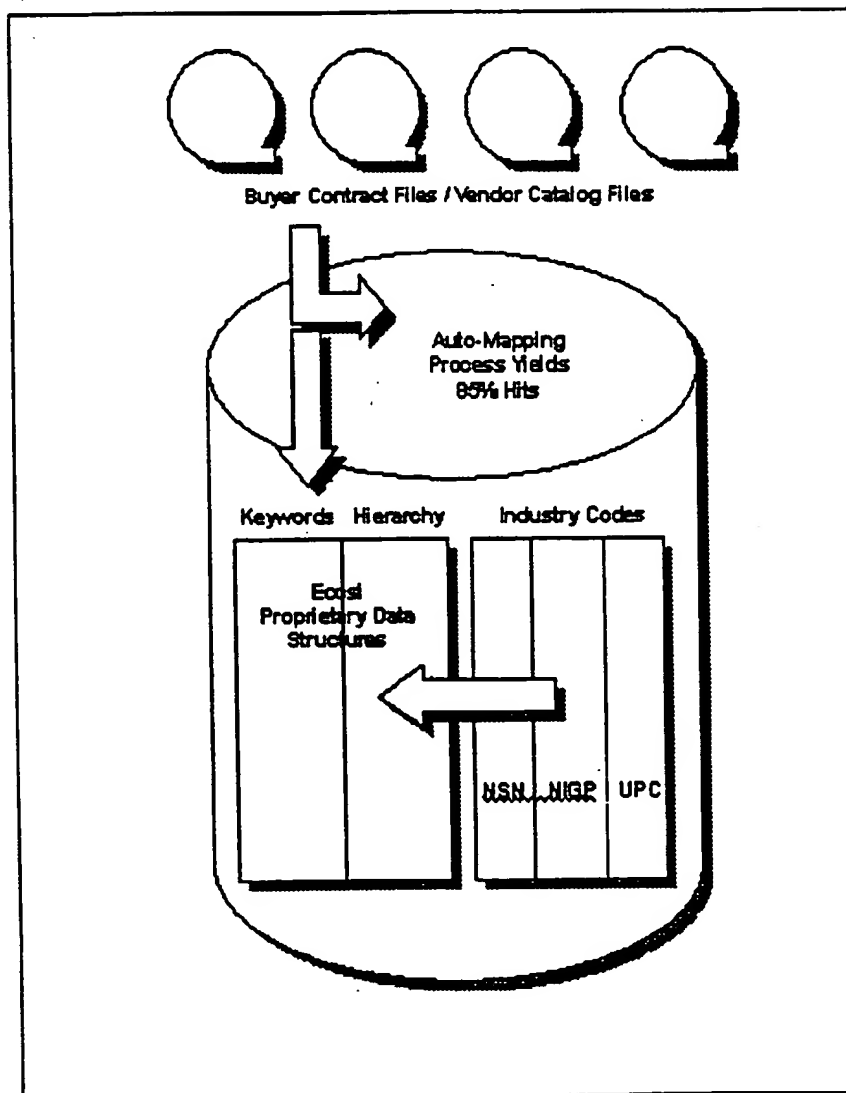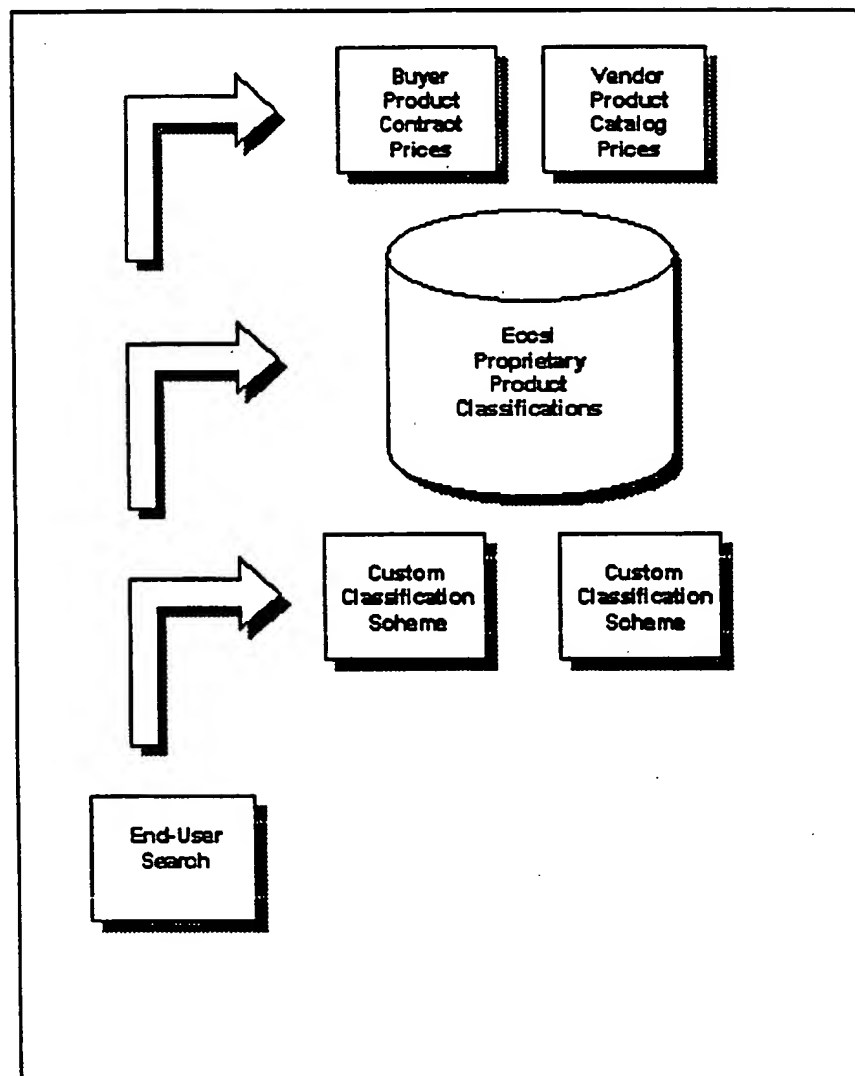
Figure 1

Figure 2

Product Mapping process

Buyer Contract Files / Vendor Catalog Files

Auto-Mapping
Process Yields
85% Hits

Keywords   Hierarchy   Industry Codes

Ecosi
Proprietary Data
Structures

NSN   NIGP   UPC

Figure 3

3-Step Catalog Search

Figure 4

Shared Electronic Transactions

Non-Eccsi Independent Transactions

Buyer System ← Vendor System

Buyer Vendor

Shared Database
Instant Transactions

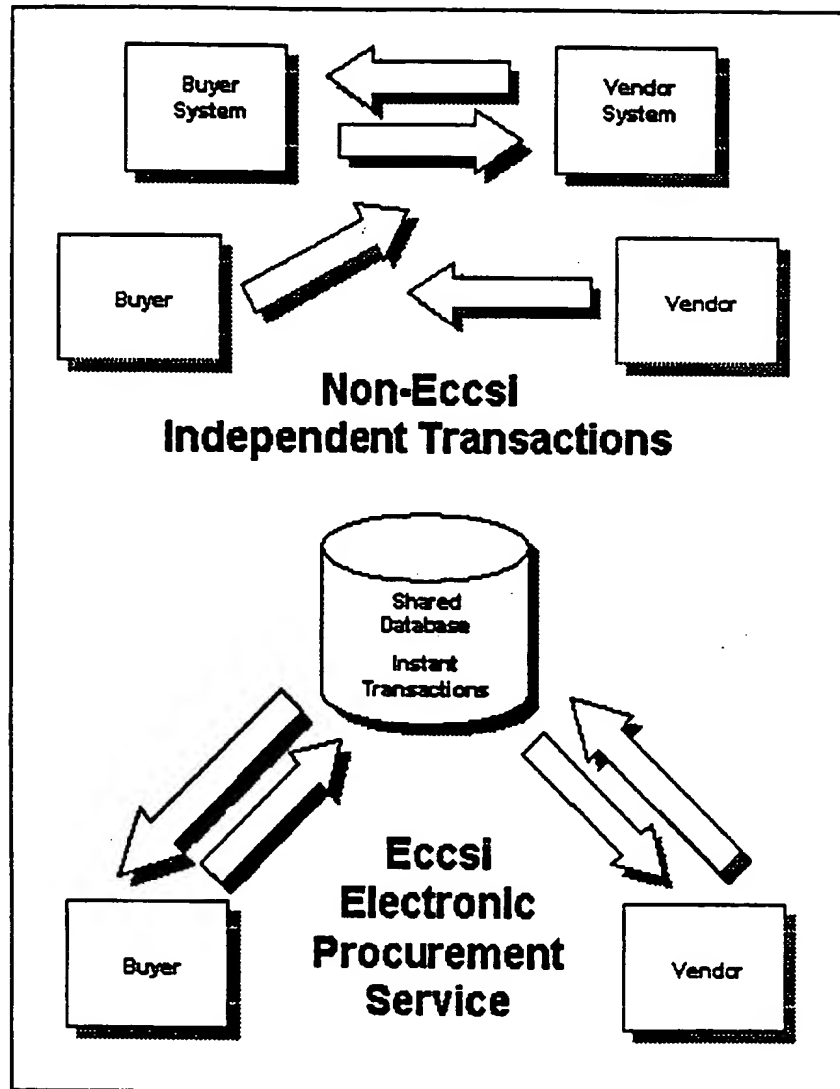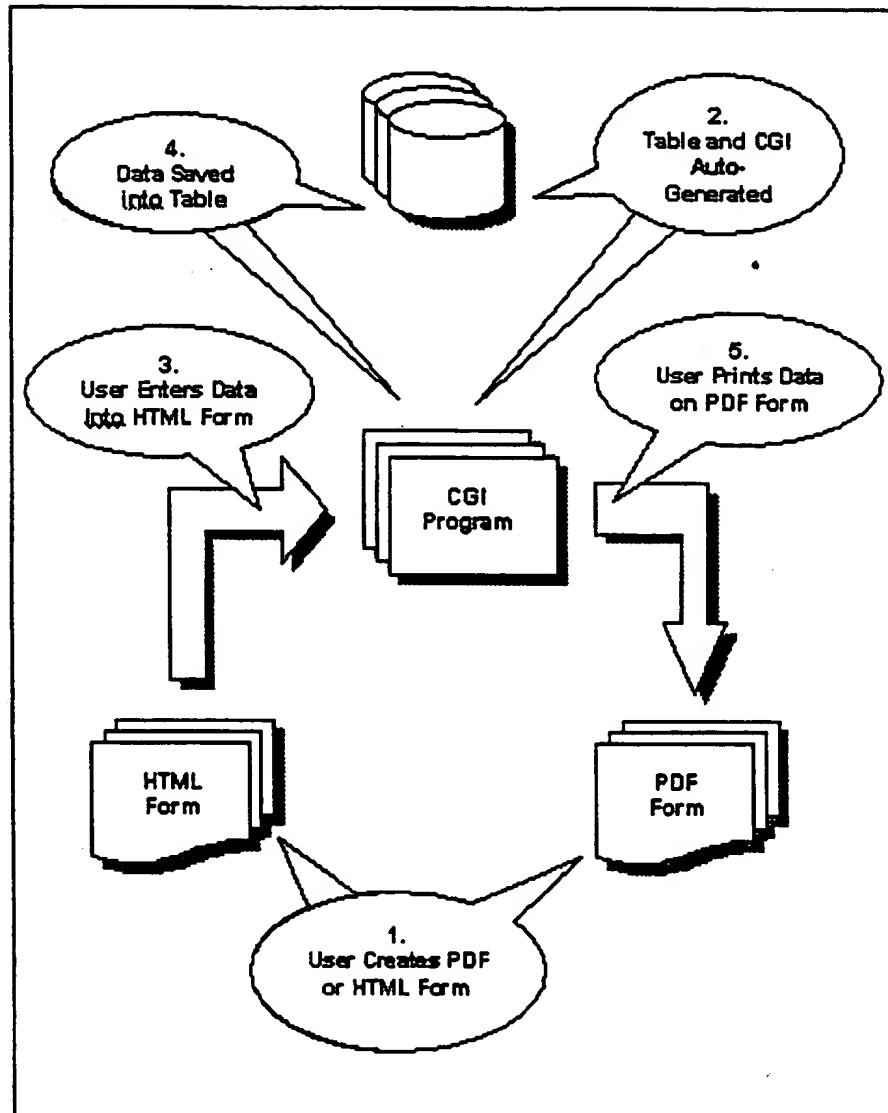**Eccsi Electronic Procurement Service**

Buyer Vendor

Figure 5

HTML-PDF Forms

Figure 6

Purchasing reviews the requisition. checks whether or not the item is in user inventory and selects a vendor. Vendor selection generates an electronic purchase order that is sent directly to the supplier's electronic mailbox. A secure electronic confirmation is returned confirming receipt and acceptance of the order. Upon receipt of the confirmation. entries are automatically sent to the client's accounting and control systems. Orders can contain information that references a number of accounts including accounts that are funded by federal sources and often require extensive compliance reporting. There are various payment options, ranging from credit card authorization that is suitable for very small purchases. to more elaborate Electronic Funds Transfer mechanisms involving the overall financial management system.

Management reports are updated and status reports can be made available directly from the web site.

The following illustration represents the structure of the ECCSI system.

EC Data Flow
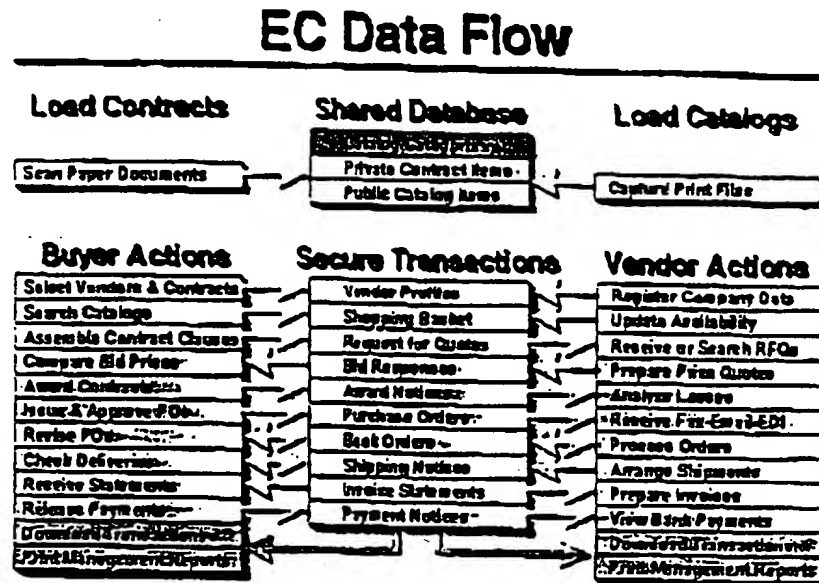
Summary of Product Features

* The system software is year 2000 compliant.
* Underlying detail information is accessible from the display location.
* The system is menu drive.
* There is an on line help function.
* There is an on line tutorial function.
* The system is optimized to present underlying and important information as efficiently and possible given the task. The number of screens that may be used to access information regarding a specific